OM protein - protein search, using sw model

GenCore version 4.5
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Run on: June 18, 2001, 15:31:57 ; Search time 50.45 Seconds
                 (without alignments)
                 523.477 Million cell updates/sec

Title: US-09-653-755A-6
Perfect score: 2487
Sequence: 1 EVQLQQSGPELVKPGASVMI.........YLKKTISRSPGKGGHHHHHH 462
Scoring table: BLOSUM62
                 Gapop 10.0 , Gapext 0.5
Searched: 390729 seqs, 57163235 residues
Total number of hits satisfying chosen parameters: 390729

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Database : A_Geneseq_0401:*
  1: /SIDS6/gcgdata/geneseq/geneseqp/AA1980.DAT:*
  2: /SIDS6/gcgdata/geneseq/geneseqp/AA1981.DAT:*
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  9: /SIDS6/gcgdata/geneseq/geneseqp/AA1988.DAT:*
 10: /SIDS6/gcgdata/geneseq/geneseqp/AA1989.DAT:*
 11: /SIDS6/gcgdata/geneseq/geneseqp/AA1990.DAT:*
 12: /SIDS6/gcgdata/geneseq/geneseqp/AA1991.DAT:*
 13: /SIDS6/gcgdata/geneseq/geneseqp/AA1992.DAT:*
 14: /SIDS6/gcgdata/geneseq/geneseqp/AA1993.DAT:*
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 19: /SIDS6/gcgdata/geneseq/geneseqp/AA1998.DAT:*
 20: /SIDS6/gcgdata/geneseq/geneseqp/AA1999.DAT:*
 21: /SIDS6/gcgdata/geneseq/geneseqp/AA2000.DAT:*
 22: /SIDS6/gcgdata/geneseq/geneseqp/AA2001.DAT:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	%Query Match	Length	DB	ID	Description
1	1839.5	74.0	468	12	R13061	Monoclonal antibod
2	1835	73.8	469	14	R40384	Monoclonal antibod
3	1789.5	72.0	341	9	P83200	Sequence encoded b
4	1693.5	68.1	447	10	P93037	Chimeric antibody
5	1670.5	67.2	477	15	R47450	T84.12 Heavy chain
6	1594.5	64.1	464	16	R76008	MAb 55.1 heavy cha
7	1590.5	64.0	445	16	R76085	MAb 55.1 heavy cha
8	1564.5	62.9	464	19	W83041	Anti-Fas MAb HFE7A
9	1564.5	62.9	464	21	B14747	Mouse anti-Fas ant
10	1564.5	62.9	464	21	W90897	Murine anti-Fas an
11	1559	62.7	453	20	Y50151	Antibody F19 chime
12	1550.5	62.3	472	20	Y50157	Chimeric mouse/hum
13	1550	62.3	465	16	R66758	Anti-tobacco mosai
14	1548	62.2	454	14	R30774	H52H4-160 murine a
15	1493.5	60.1	472	21	B08026	A dimeric anti-CD2
16	1489.5	59.9	472	21	Y50166	Human reshaped F19
17	1466.5	59.0	449	14	R43339	Completely humanis
18	1466.5	59.0	449	19	W49816	Amino acid sequenc
19	1459.5	58.8	470	21	W90933	Humanised anti-Pas
20	1459.5	58.7	470	21	W90934	Humanised anti-Pas
21	1458.5	58.6	470	19	W83037	Anti-Fas humanised
22	1458.5	58.6	470	21	B14779	Humanised HFE7A de
23	1458.5	58.6	470	21	W90929	Humanised anti-Fas
24	1458.5	58.6	470	21	W90935	Humanised anti-Fas
25	1457.5	58.6	470	21	W83036	Humanised anti-Fas
26	1457.5	58.6	470	21	B14776	Humanised anti-Fas
27	1457.5	58.6	470	21	W90926	Humanised HFE7A de
28	1456.5	58.5	652	19	W48650	Heavy chain of hmA
29	1455.5	58.5	464	18	W14941	3F4 Human IgG4 exp
30	1455.5	58.5	464	18	W14938	Murine anti-porcin
31	1455.5	58.5	464	13	R28808	3F4 Human anti-por
32	1451.5	58.4	481	13	R24442	Sequence of antibo
33	1451.5	58.4	595	20	W86003	pre-5A8 humanised
34	1447	58.2	467	22	B36210	Anti-5T4 single ch
35	1446	58.1	463	18	W14939	Human immune syste
36	1446	58.1	463	18	W14940	3F4 (Chimeric) hum
37	1439.5	57.9	470	21	W90936	3F4 (Chimeric) hum
38	1434	57.7	448	14	R43673	Humanised HFE7A de
39	1433	57.6	448	17	R97376	Mouse anti-bovine
40	1431.5	57.6	711	20	W85692	Murine anti-BGH MA
41	1429.5	57.5	468	20	W85689	MoTAbII fusion pro
42	1429.5	57.5	468	14	R31023	D9D10 heavy chain
43	1427	57.4	476	14	Y29458	Antibody D heavy c
44	1427	57.4	452	20	B30322	Recombinant immuno
45	1427	57.4	452	21	Y77766	Humanised anti-IL-

ALIGNMENTS

RESULT   1
R13061

ID   R13061 standard; Protein; 468 AA.
XX
AC   R13061;
XX
DT   03-OCT-1991 (first entry)
XX
DE   Monoclonal antibody OK3T heavy chain.
XX
KW   OK3T; light chain; humanised antibodies; CDR-grafting.
XX
OS   Mus musculus.
XX
FH   Key   Location/Qualifiers
FT   Peptide   1..19
FT   /label= signal peptide
FT   Protein   20..468
FT   /label= light chain
XX
PN   WO9109967-A.
XX
PD   11-JUL-1991.
XX
PF   21-DEC-1990; 90WO-GB02017.
XX
PR   21-DEC-1990; 90WO-GB02017.
PR   21-DEC-1989; 89GB-0028874.
XX
PA   (CELL-) CELLTECH LTD.
XX
PI   Adair JR, Athwal DS, Emtage JS;
XX
DR   WPI; 1991-222915/30.

```
DR   N-PSDB; Q12637.
XX
PT   New humanised antibodies comprising CDR grafted antibody - with
PT   heavy and light chains, for use in in vivo therapy and diagnosis
XX
PS   Disclosure; Fig 2b; 91pp; English.
XX
CC   The OK3T heavy chain sequence was deduced from the cDNA sequence
CC   isolated from a library prepared from OK3T producing cells. The
CC   library was screened with a probe complementary to a region in the
CC   mouse IgG2a constant domain region. The OK3T sequence was used in.
CC   CDR-grafting experiments to prepare humanised antibodies.
XX
SQ   Sequence   468 AA;

Query Match         74.0%;      Score 1839.5;   DB 12;   Length 468;
Best Local Similarity    76.3%;   Pred. No. 3.2e-111;
Matches  347;  Conservative  41;  Mismatches  60;  Indels  7;  Gaps  3;

Qy    1 EVQLQQSGPELVKPGASVMISCRTSAYTFTENTVHWVKQSHGESLEWIGGINPYYGGSIF 60
         ||||||||||||||||| :||||| : :|||| || ||||||
Db   20 qvqlqgsgaelarpgasvkmscka...                                 79

Qy   61 SPKFKGKATLTVDKSSSTAYMELRSLTSEDSAVYYCARRAGAY-FDYWGQGTTLTVSSA 119
Db   80 nqkfkdkatltdkssstaymglsltsedsavyycaryyddhycldywgqgttltvssa 139

Qy  120 KTTPPSVYPLAPGCGDTTGSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHTFPALLQSGI 179
Db  140 kttapsvyplapvcgdtgssvtlgclvkgyfpepvtltwnsgslssgvhtfpavlqsdl 199

Qy  180 YTMSSSVTVPSSTWPSSQTVTCSVAHPASSTTVDKLEPSGPISTINPCPCKECHKCPAP 239
Db  200 ytlssvvtvtsstwpsqsitcnvahpasstkvdkkleprgp--tikpcppc----kcpap 253

Qy  240 NLEGGPSVFIFPPNIKDVLMISLTPKVTCVVVDVSEDDPDVQISWFVNNVEVHTAQTQTH 299
Db  254 nligqpsvfifppkikdvlmislspivtcvvvdvseddpdvqiswfvnnvevhtaqtqth 313

Qy  300 REDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTISKIKGLVRAPQVYILP 359
Db  314 redynstirvvsalpiqhqdwmsgkefckvnnkdlpapiertiskpgvsrapqvyvlp 373

Qy  360 PPAEQLSRKDVSLTCLVVGFNPGDISVEWTSNGHTEENYKDTAPVLDSDGSYFIYSKLNM 419
Db  374 ppeeemtkkqvtltcmvtdfmpediyvewtnngktelnykntepvldsdgsyfmysklrv 433

Qy  420 KTSKWEKTDSFSCNVRHEGLKNYYLKKTISRSPGK 454
         : ::|: ||||| ||| :: : |:|||
Db  434 ekknwernsyscsvvheglhnhhttksfsrtpgk 468
```

```
RESULT  2
R40384

ID   R40384 standard; Protein; 469 AA.
XX
AC   R40384;
XX
DT   08-FEB-1994 (first entry)
XX
DE   Monoclonal antibody M(alpha)2-3 Heavy-chain.
XX
KW   anti-snake small neurotoxin antibody; heavy chain; IgG2;
KW   immunoglobulin; bispecific bivalent antibody; cell-targetting;
KW   cytotoxic agent.
XX
FH   Key             Location/Qualifiers
FH
FT   Peptide         1..19
FT                   /label= signal_peptide
FT   Region          20..139
FT                   /label= variable
FT   Region          140..236
```

```
FT   Region          /label= constant
FT                   237..252
FT   Region          /label= joining
FT                   253..362
FT   Region          /label= constant
FT                   363..469
XX
PN   EP556111-A.
XX
DT   18-AUG-1993.
XX
PD   09-FEB-1993;   93EP-0400323.
XX
PF   11-FEB-1992;   92FR-0001505.
XX
PA   (BOUL/)  BOULAIN J.
PA   (COMS )  COMMISSARIAT ENERGIE ATOMIQUE.
XX
PI   Boulain J, Ducancel F, Gillet D, Menez A;
XX
DR   WPI; 1993-260351/33.
DR   N-PSDB; Q48037.
XX
PT   New immunoglobulin hybrid proteins - with immunoglobulin
PT   fragments linked to dimeric protein, for diagnostic or
PT   therapeutic use
XX
PS   Example 1; Fig 3A; 37pp; French.
XX
CC   A fragment of the heavy chain (VH + CH1) from the anti-snake small
CC   neurotoxin monoclonal antibody M(alpha)2-3 was PCR-amplified from
CC   hybridoma-derived cDNA using primers Q48039 and Q48040. A light
CC   chain fragment (VL + CL) was amplified from the same source using
CC   primers Q48041 and Q48042. The two amplified fragments were
CC   inserted into the same vector; the H-chain fragment was inserted
CC   (in-frame) between codons 6-7 of the phoA coding sequence and the
CC   L-chain fragment was inserted into a cassette which contained a
CC   phoA S-D sequence, a signal peptide and the first 6 codons of phoA.
CC   The cassette was positioned between the termination codon and
CC   the transcription termination sequence of phoA. The fusion
CC   construct is expected to to encode a hybrid protein comprising two
CC   identical Ab-derived units. The invention also covers hybrid
CC   proteins containing two different Ab-derived units (i.e. to produce
CC   bispecific antibodies). When a toxic protein is used in place of
CC   phoA, the hybrid molecules can be used as cell-targetting
CC   therapeutic agents.
XX
SQ   Sequence   469 AA;

Query Match         73.8%;      Score 1835;   DB 14;   Length 469;
Best Local Similarity    75.7%;   Pred. No. 6.2e-111;
Matches  345;  Conservative  44;  Mismatches  59;  Indels  8;  Gaps  3;

Qy    1 EVQLQQSGPELVKPGASVMISCRTSAYTFTENTVHWVKQSHGESLEWIGGINPYYGGSIF 60
         ::||||||||||||||| ||:  |:|||: :|||| ||:  ||||
Db   20 qvqlqgsgpelvkpgasvkisckasgytfdyyinwqkpsqglkwigwiypasgntky 79

Qy   61 SPKFKGKATLTVDKSSSTAYMELRSLTSEDSAVYYCARRAG--AYFDYWGQGTTLTVSS 118
         : |||||||||||:|||||||:| ||||:|||||:||| :: ||||||||||||| ||
Db   80 nenfkgkatltvdtssstaymqlsslsedtavyfcaramgatatlddywgqgttlvss 139

Qy  119 AKTTPPSVYPLAPGCGDTTGSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHTFPALLQSG 178
         ||||:|||||||| |||| |||||||||||||||:|||:|||||||||:|||||||||:
Db  140 akttapsvyplapvcgdtgssvtlgclvkgyfpepvtltwnsgslssgvhtfpavlqsd 199

Qy  179 LYTMSSSVTVPSSTWPSSQTVTCSVAHPASSTTVDKLEPSGPISTINPCPCKECHKCPA 238
         |||:|| |||:|||||| |:| |||||||||:|||| || ||: |||||| |||| |||
Db  200 lytlssvvtvtsstwpsqsitcnvahpasstkvdkkleprgp--tikpcppc----kcpa 253

Qy  239 PNLEGGPSVFIFPPNIKDVLMISLTPKVTCVVVDVSEDDPDVQISWFVNNVEVHTAQTQT 298
         || ||||||||||:|||||||||| | |||||||||||||||||||||||||||||||||
Db  ...                                                             298
```

```
Db  254 pnllggpsvflfppkikdvlmislspivtcvvvdvseddpdvqiswfvnnvevhtaqtqt 313
        |||||||||:|||||||||||||||||||||||||||||||:|||||
Qy  299 HREDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTISKIKGLVRAPQVYIL 358
        ||||||||||||:||||||||||||||||||||||||:||||||||||||||:|||||||:|
Db  314 hredynstirvvsalpiqhqdwmsgkefckvnnkdlpapiertiskpkgsvrapqvyvl  373
Qy  359 PPPAEQLSRKDVSLTCLVVGFNPGDISVEWTSNGHTEENYKDTAPVLDSDGSYFIYSKLN 418
        ||| ||||||||:|:|:||:||||||||||||:||| |:|:|||||||||||||:|:|||
Db  374 pppeeemtkkqvtltcmvtdfmpediyvewtnngkteinykntepvldsdgsyfnyskrl  433
Qy  419 MKTSKWEKTDSFSCNVRHEGLKNYYLKKITISRSPGK                        454
        :||:|:|::|::||:|:|:|||:|::|::|||||||
Db  434 vekknwvernsyscsvvheglnhhhttksfsrtpgk                         469
```

RESULT 3

ID   P83200 standard; protein; 341 AA.
XX
AC   P83200;
XX
DT   06-MAR-1992 (first entry)
XX
DE   Sequence encoded by mouse IgG gamma 2b gene.
XX
KW   Immunoglobulin; class gamma; antibody; immune response; Fc receptor;
KW   effector molecule; constant region; heavy chain; complement.
XX
OS   Mouse.
XX
FH   Key   Location/Qualifiers
FH
FT   Domain   1..97
FT   /label= CH1
FT   Region   98..119
FT   /label= hinge
FT   Domain   120..234
FT   /label= CH2
FT   Domain   235..341
FT   /label= CH3
FT   Misc-difference   122
FT   /note= "This residue is Leu in mutant EL235"
XX
PD   22-SEP-1988.
XX
PN   WO8807089-A.
XX
PR   18-MAR-1988; 88WO-GB00211.
PR   01-DEC-1987; 87GB-0028042.
PR   18-MAR-1987; 87GB-0006425.
PR   10-AUG-1987; 87GB-0018897.
PR   18-MAR-1988; 88WO-GB00211.
PR   01-JAN-1988; 88WO-GB0025480.
XX
PA   (MEDI-) MEDICAL RES COUNCIL.
XX
PI   Winter GP, Duncan AR, Burton DR;
XX
DR   WPI; 1988-285543/40.
DR   N-PSDB; N82456.
XX
PT   Modified IgG class antibody - having at least one aminoacid
PT   residue in the constant portion altered to alter an effector
PT   function
XX
PS   Example; Fig 3; 42pp; English.
XX
CC   Modified antibodies (Abs) having an altered Fc region with altered
CC   binding affinity for an Fc receptor esp. Fc-gamma-R1 may have the
CC   following residues replaced: 234, 235, 236 and 237; 235 by Glu,
CC   and at least one of the others by Ala. Those with altered binding
CC   affinity for C1q may have an altered CH2 domain in which one of the
CC   following residues of the heavy chain have been changed to a

CC   residue with a different side chain; 318 (changed to Val) 320 and
CC   322 (changed to Gln). Those with altered lytic properties, as
CC   compared with unmodified Ab may have an altered CH2 domain where
CC   residue 297 of the heavy chain has been changed to Ala.
XX
SQ   Sequence 341 AA;

Query Match   72.0%; Score 1789.5; DB 9; Length 341;
Best Local Similarity   98.5%;   Pred. No. 3.8e-108;
Matches 336; Conservative 0; Mismatches 0; Indels 5; Gaps 1;

Qy 119 AKTTPPSVYPLAPGCGDTTGSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHTFPALLQSG 178
        ||||||||||| ||||| |||||||||||||||||||||||||||||||||||||||||||
Db   1 akttppsvyplapgcgdttgssvtlgclvkgyfpesvtvtwnsgslsssvhtfpallqsg 60
Qy 179 LYTMSSSVTVPSSTWPSQTVTCSVAHPASSTTVDKKLEPSGPISTINPCPPCKECHKCPA 238
        ||||||||||||| |||||||||||||||||||||||||||||||||||||||||||||||
Db   61 lytmsssvtvpssstwpsgtvtcsvahpassttvdkklepsgpistinpcppckechkcpa 120
Qy 239 PNLEGGPSVFIFPPNIKDVLMISLTPKVTCVVVDVSEDDPDV-----QISWFVNNVEVHT 293
        |||||||||| ||||||||||||||||||||||||||||||| |||||||||||||
Db 121 pnleggpsvflfppnikdvlmisltpkvtcvvvdvseddppqiswfvnnvevht   180
Qy 294 AQTQTHREDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTISKIKGLVRAP 353
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 181 aqtqthredynstirvvstlpiqhqdwmsgkefckvnnkdlpspiertiskikglvrap 240
Qy 354 QVYILPPPAEQLSRKDVSLTCLVVGFNPGDISVEWTSNGHTEENYKDTAPVLDSDGSYFI 413
        ||||||| |||||||||||||||||||||||||||||||||||||||||||||||||||
Db 241 qvyilppppaeqlsrkdvsltclvvgfnpgdisvewtsnghteenykdtapvldsdgsyfi 300
Qy 414 YSKLNMKTSKWEKTDSFSCNVRHEGLKNYYLKKTISRSPGK 454
        ||| |||||||||||||||||||||||||||||||||||||
Db 301 yskinmktskwektdsfscnvrhegiknyylkktisrspgk 341

RESULT 4

ID   P93037 standard; protein; 447 AA.
XX
AC   P93037;
XX
DT   14-MAR-1990 (first entry)
XX
DE   Chimeric antibody heavy chain variable region.
XX
OS   Mus.
XX
KW   KS1/4; chimeric antibody; heavy chain variable region;
XX
PN   EP338767-A.
XX
PD   25-APR-1989.
XX
PF   18-APR-1989; 89EP-0303814.
XX
PR   21-APR-1988; 88US-0184522.
XX
PA   (ELIL) ELI LILLY AND CO.
XX
PI   Beavers LS, Bumol TF, Gadski RA, Weigel BJ;
XX
DR   WPI; 1989-311203/43.
DR   N-PSDB; N91659.
XX
PT   Recombinant DNA cpds. producing antibodies - monoclonal and
PT   chimeric derived from monoclonal antibody KS1/4.
XX
PS   Claim 6; page 50; 89pp; English.
XX
CC   The sequence encodes the heavy chain of MAb KS1/4, used to
CC   construct mouse/human chimeric antibodies. KS1/4 is a murine antibody
```

```
DR   N-PSDB; Q54652.
XX
PT   New chimeric T84.12 antibody active against carcinoembryonic
PT   antigen - has murine variable and human constant regions, also
PT   DNA encoding it and transformed myeloma cells
XX
PS   Claim 1; Page 17; 27pp; English.

CC   The sequences (Q54651-52) show the light and heavy chain cDNAs
CC   of murine T84.12. The T84.12 antibody is directed against the
CC   tumour marker carcinoma embryonic antigen, and is useful for
CC   tumour imaging and immunotherapy.
CC   The amino acid sequence given in the specification has been
CC   incorrectly identified in the specification has been
CC   The amino acid sequence given in the specification has been
CC   incorrectly identified as a nucleic acid sequence, therefore
CC   unacceptable characters have been represented as an 'N'.
CC   The amino acid sequence given below has been derived from the
CC   cDNA, by the indexer.
XX
SQ   Sequence  447 AA;
```

```
CC   which binds to surface antigens on adenocarcinoma cells and the use of
CC   human C regions avoids immunological problems during treatment.
XX
SQ   Sequence  447 AA;

Query Match     Best Local Similarity   68.1%;   Score 1693.5;  DB 10;  Length 447;
                Conservative   69.7%;   Pred. No. 8e-102;
Matches 317;   Mismatches 55;   Indels 9;   Gaps 4;
```

```
Qy   1 EVQLQQSGPELVKPGASVMISCRTSAYTFTENTVHWVKQSHGESLEWIGGINPYYGGSIF 60
         ::||  ||||| ||  |||:  | :: ||  |:|| |:|  || |||||| |||||  |:
Db   1 qiqlvqsgpelkkpgetvkisckasgytftnygmnwvkqtpgkglkwmgwintytgepty 60

Qy  61 SPKFKGKATLTVDKSSSTAYMELRS-LTSEDSAVYYCARRAGAYYFDYWGQGTTLTVSSA 119
         ||| |||||||||| |||  |||:  |||||||| ||| |||| | |||| |||||
Db  61 addfkgrfafsletsastafiqiqpqnmrtnatyfcvrflsk--gdywgggtsvtvssa 118

Qy 120 KTTPPSVYPLAPGCGDTTGSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHTFPALLQSGL 179
        ||| ||||||  |  |||||||||||||||||||||||||||||||||||||| |:
Db 119 kttapsvyplapvcgdttgssvtlgclvkgyfpepvtltwnsgslssgvhtfpavlqsdl 178

Qy 180 YTMSSSVTVPSSTWPSQTVTCSVAHPASSTTVDKKLEPSGPISTINPCPPCKECHKCPAP 239
        ||| | ||| ||||||||||||||||:||||||||||:| | ||||||||: : |||
Db 179 ytlsssvtvtsstwpsqsitcnvahpasstkvdkkieprgp----tikpcppc----kcpap 232

Qy 240 NLEGGPSVFIFPPNIKDVLMISLTPKVTCVVVDVSEDDPDVQISWFVNNVEVHTAQTQTH 299
        ||:|||||| |||:|||||||| |||||||||||||||||||||||||||||||||||
Db 233 nliggpsvflfppkidvlmislspivtcvvvdvseddpdvqiswfvnnvevhtaqtqth 292

Qy 300 REDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTISKIKGLVRAPQVVLP 359
        ||||||||||| ||||||||||||||||||||||||| |||||||| || ||||||| ||
Db 293 redynstirvvsalpiqhqdwmsgkefkckvnnkdlpapiertiskpkgsvrapqvvylp 352

Qy 360 PPAEQLSRKDVSLTCLVVGFNPGDISVEWTSNGHTEENYKDTAPVLDSDGSYFIYSKLNM 419
        || :: :| |:| || |  | | |:|||| ::| |||:|| ||||||||||| |||| :
Db 353 ppeeemkkqvtltcmvtdfmpediyvewtnngktelnykntepvldsdgsyfmysklrv 412

Qy 420 KTSKWEKTDSFSCNVRHEGLKNYYLKKTISRSPGK 454
          |: | :: :|| |:|||||| : || ||| |||
Db 413 eknnwvernsyscsvvqeglhnhhttksfsrtpgk 447
```

```
RESULT 6
ID   R76088 standard; Protein; 464 AA.
XX
AC   R76088;
XX
DT   21-NOV-1995  (first entry)
XX
DE   MAb 55.1 heavy chain.
XX
KW   Antigen binding structure; complementarity determining region; CDR;
KW   CA55.1; colorectal cancer; tumor-associated antigen; hybridoma;
KW   monoclonal antibody; MAb; immunotherapy; therapy; diagnosis;
KW   transgenic animal; transgenic plant; antibody engineering;
KW   humanized antibody; immunotoxin.
```

```
Query Match     Best Local Similarity   67.2%;   Score 1670.5;  DB 15;  Length 477;
                Conservative   69.0%;   Pred. No. 2.6e-100;
Matches 316;   Mismatches 54;   Indels 13;   Gaps 5;

SQ   Sequence  477 AA;
```

```
Qy   1 EVQLQQSGPELVKPGASVMISCRTSAYTFTENTVHWVKQSHGESLEWIGGINPYYGGSIF 60
         ::||  |||| ||  |||:  | : ||  : :: |:|| |:|  || |||||| |||||  |:
Db  29 evkivesgggfvkpggslklscaasgftfssyamswvrqtpekrlewvasiss-dgitfy 87

Qy  61 SPKFKGKATLTVDKSSSTAYMELRSLTSEDSAVYYCARRAGAYY-----FDYWGQGTTLTV 116
         | : |  | |::  || :  | :|| |||||| ||| ||||     | |||| ||| ||
Db  88 vdsvkgrftvsrdnarnllylqmsslrsedtamyycari--dyyggggfgyvqggtlatv 145

Qy 117 SSAKTTPPSVYPLAPGCGDTTGSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHTFPALLQ 176
        ||||||||||||||  |  |||||||||||||||||||:||||||||||||||| |:
Db 146 saaktttppsvyplapvcgdttgssvtlgclvkgyfpepvtltwnsgslssgvhtfpavlq 205

Qy 177 SGLYTMSSSVTVPSSTWPSQTVTCSVAHPASSTTVDKKLEPSGPISTINPCPPCKECHKC 236
        | |||| | ||| |||||||||||||||||:||||||||:| | ||||||||:
Db 206 sdlytlsssvtvtsstwpsqsitcnvahpasstkvdkkieprgp--tikpcppc----kc 259

Qy 237 PAPNLEGGPSVFIFPPNIKDVLMISLTPKVTCVVVDVSEDDPDVQISWFVNNVEVHTAQT 296
        ||||:|||||| |||:|||||||| |||||||||||||||||||||||||||||||||
Db 260 papnllggpsvflfppkidvlmislspivtcvvvdvseddpdvqiswfvnnvevhtaqt 319

Qy 297 QTHREDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTISKIKGLVRAPQVY 356
        ||||||||||||| ||||||||||||||||||||||| |||||||| || |||||||
Db 320 qthredynstirvvsalpiqhqdwmsgkefkckvnnkdlpapiertiskpkgsvrapqvy 379

Qy 357 ILPPPAEQLSRKDVSLTCLVVGFNPGDISVEWTSNGHTEENYKDTAPVLDSDGSYFIYSK 416
         |||| :: :| |:| || |  | | |:|||| ::| |||:|| ||||||||||| |||
Db 380 vlppeeemkkqvtltcmvtdfmpediyvewtnngktelnykntepvldsdgsyfmysk 439

Qy 417 LNMKTSKWEKTDSFSCNVRHEGLKNYYLKKTISRSPGK 454
         | |: | :: :|| |:||||||| : || ||| |||
Db 440 lrvekknwvernsyscsvvqheglhnyhttksfsrtpgk 477
```

```
XX
OS   Mus sp.
XX
FH   Key           Location/Qualifiers
FT   Peptide       1..19
FT                 /label= Sig_peptide
FT   Protein       20..464
FT                 /label= Mat_protein
FT                 /note= "claim 3, page 97-98"
XX
PN   WO9515382-A.
XX
PD   08-JUN-1995.
XX
PF   29-NOV-1994;
XX
PR   03-JUN-1994;   94GB-0011089.
PR   03-DEC-1993;   93GB-0024819.
XX
PA   (ZENE ) ZENECA LTD.
XX
PI   Blakey DC, Boot C, Copley CG, Hall SM, Paterson DS;
PI   Rose MS, Wright AF;
XX
DR   WPI; 1995-215262/28.
DR   N-PSDB; Q94037.
XX
PT   Antigen binding structures containing CDRs recognising the CA55.1
PT   antigen - produced by hybridomas and host cells, for use in the
PT   diagnosis and therapy of cancer
XX
PS   Disclosure; Fig.15; 121pp; English.
XX
CC   MAb 55.1 (ECACC 93081901) recognises the colorectal tumor-associated
CC   antigen CA55.1. cDNAs for the heavy (Q94037) and light (Q94036)
CC   chains of 55.1 were isolated, and F(ab)', F(ab)2, Fab, Fv, scFv or
CC   V-min humanized 55.1 constructs have been expressed in myeloma
CC   cells and E. coli.
XX
SQ   Sequence    464 AA;
```

```
Query Match    64.18;    Score 1594.5;   DB 16;   Length 464;
Best Local Similarity   66.5%;   Pred. No. 2e-95;
Matches 304;   Conservative  55;   Mismatches  83;   Indels  15;   Gaps  6;
```

```
Qy     1 EVQLQQSGPELVKPGASVMISCRTSAYTFTENTVHWVKQSHGESLEWIGGINPYYGGSIF 60
           :||||| | ||||||||| ::|: ||:: | |||||||: ||||||| |||||
Db    20 qvqlqqpgaelvkpgasvqisckasgyttgywihwvkqrpgqglewigvevnpstgrsdy 79

Qy    61 SPKFKGKATLTVDKSSSTAYMELRSLTSEDSAVYYCAR-RAGAY--YFDYWGQGTTLTVS 117
           : ||| |||||||||||||||||||||||||||||||| |||||  |||||||||::|||
Db    80 nekfknkatltvdksstaymqlssltsedsavyycareraygyddamdywgqgtsvtvs 139

Qy   118 SAKTTPPSVYPLAPGCGDTTGSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHTFPALLQS 177
           ||||||||||||||| |||||||||||||||||||:||||||||||||||:|||||:|||
Db   140 sakttppsvyplapgsaaqtnsmvtlgclvkgyfpepvtvtwnsgslssgvhtfpavlqs 199

Qy   178 GLYTMSSSVTVPSSTWPSQTVTCSVAHPASSTTVDKLEPSGPISTINPCPPCKECHKCP 237
           |||||||| |||||||||| ||| ||||||| ::||| ||||
Db   200 dlyltlssvtvpsstwpsetvtcnvahpasstkvdkkivp------rdc-gckpc-ict 250

Qy   238 APNLEGGPSVFIFPPNIKDVLMISLTPKVTVCVVVDVSEDDPDVQISWFVNNVEVHTAQTQ 297
           |: |||||||| | |||||| :||:|| |:||||  |||||||| |||||||: ||||||
Db   251 vpevs---svfifppkpkdvltiltpkvtvcvvvdiskddpevqfswfvddvevhtaqtq 307

Qy   298 THREDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTISKIKGLVRAPQVYI 357
           |: ||| | |||||||||||||| |||||||||| ||||||||||| ::|| |||||
Db   308 preeqfnsticvvselpimhqdwlngkefkcrvnsaafppapiektisktkgrpkapqvyt 367

Qy   358 LPPPAEQLSRKDVSLTCLVVGFNPGDISVEWTSNGHTEENYKDTAPVLDSDGSYFIYSKL 417
           :||| |::: |||||||||: || ||: :|||  :| |:|| || |::: |:| ||||||
Db   368 ippphegqmakdkvsltcmitdfffpeditvewqwngqpaenykntcqpimdtdgsyfvyskl 427

Qy   418 NMKTSKWEKTDSFSCNVRHEGLKNYYLKKTISRSPGK 454
           |:::  | ||  :::|| ||  |||:: |||:||  |||
Db   428 nvqksnweagntftcsvlheglhnhhteksishspgk 464
```

```
RESULT  7
R76085
ID   R76085 standard; Peptide; 445 AA.
XX
AC   R76085;
XX
DT   21-NOV-1995  (first entry)
XX
DE   Mab 55.1 heavy chain.
XX
PN   WO9515382-A.
XX
PD   08-JUN-1995.
XX
PF   29-NOV-1994;   94WO-GB02610.
XX
PR   03-JUN-1994;   94GB-0011089.
PR   03-DEC-1993;   93GB-0024819.
XX
PA   (ZENE ) ZENECA LTD.
XX
PI   Blakey DC, Boot C, Copley CG, Hall SM, Paterson DS;
PI   Rose MS, Wright AF;
XX
DR   WPI; 1995-215262/28.
XX
PT   Antigen binding structures containing CDRs recognising the CA55.1
PT   antigen - produced by hybridomas and host cells, for use in the
PT   diagnosis and therapy of cancer
XX
PS   Claim 3; Page 97-98; 121pp; English.
XX
CC   An antigen binding structure is based on the CDRs (given in R76078-
CC   84) of the heavy (R76085) and light (R76086) chains of MAb 55.1
CC   (ECACC 93081901), which recognises the colorectal tumor-associated
CC   antigen CA55.1.  It is optionally humanized and in the form F(ab')2,
CC   F(ab)', Fab, Fv, scFv or V-min, and is produced in transgenic
CC   animals or plants.
XX
SQ   Sequence    445 AA;
```

```
Query Match    64.08;    Score 1590.5;   DB 16;   Length 445;
Best Local Similarity   66.5%;   Pred. No. 3.5e-95;
Matches 304;   Conservative  54;   Mismatches  84;   Indels  15;   Gaps  6;
```

```
Qy     1 EVQLQQSGPELVKPGASVMISCRTSAYTFTENTVHWVKQSHGESLEWIGGINPYYGGSIF 60
           :||||| | ||||||||| ::|: ||:: | |||||||: ||||||| |||||
Db     1 qvqlqqpgaelvkpgasvqisckasgyttgywihwvkqrpgqglewigvevnpstgrsdy 60

Qy    61 SPKFKGKATLTVDKSSSTAYMELRSLTSEDSAVYYCAR-RAGAY--YFDYWGQGTTLTVS 117
           : ||| |||||||||||||||||||||||||||||||| |||||  |||||||||::|||
Db    61 nekfknkatltvdksstaymqlssltsedsavyycareraygyddamdywgqgtsvtvs 117

Qy   118 SAKTTPPSVYPLAPGCGDTTGSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHTFPALLQS 177
           ||||||||||||||| |||||||||||||||||||:||||||||||||||:|||||:|||
Db   121 sakttppsvyplapgsaaqtnsmvtlgclvkgyfpepvtvtwnsgslssgvhtfpavlqs 180

Qy   178 GLYTMSSSVTVPSSTWPSQTVTCSVAHPASSTTVDKLEPSGPISTINPCPPCKECHKCP 237
           |||||||| |||||||||| ||| ||||||| ::||| ||||
Db   181 dlyltlssvtvpsstwpsetvtcnvahpasstkvdkkivp------rdc-gckpc-ict 237
```

Db 181 dlytlssvvtvpsstwpsetvtcnvahpasstkvdkkivp-------rdc-gckpc-ict 231
　　　　|||:||||||||||||||||||||||||:|:||　　||　　|　||　||
Qy 238 APNLEGGPSVFIFPPNIKDVLMISLTPKVTCVVVDVSEDDPDVQISWFVNNVEVHTAQTQ 297
　　　　|:|　|||||||||||||||||||||:|:||:||||||||||
Db 232 vpevs---svfifppkpkdvltltltlpkvtcvvvdiskddpevqfswfvddvevhtaqtq 288

Qy 298 THREDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTISKIKGLVRAPQYYI 357
　　　　|||||||||||||:||||||||:|:||||||||||||||||||||||||
Db 289 preeqfnstfrsvselpimhqwlngkefkcrvnsaafpapiektisktkgrpkapqyyt 348

Qy 358 LPPPAEQLSRKDVSLTCLLVGFNPGDISVEWTSNGHTEENYKDTAPVLDSDGSYFIYSKL 417
　　　　||||||||||||||||||||||||:|||:|:||||||||||||||||||
Db 349 ipppkeqqakdvsltcmitdffpeditvewqwngqpaenykntqpimdtdgsyfvyskl 408

Qy 418 NMKTSKWEKTDSFSCNVRHEGLKNYYLKKTISRSPGK 454
　　　　|:|:||　||　|:||||:||||:||||||||||
Db 409 nvqksnweagntftcsvlheglnnhhteksishspgk 445

RESULT 8
W83041
ID　　W83041 standard; Protein; 464 AA.
XX
AC　　W83041;
XX
DT　　15-MAR-1999 (first entry)
XX
DE　　Anti-Fas MAb HFE7A heavy chain.
XX
KW　　HFE7A; monoclonal antibody; mouse; Fas; humanised antibody;
KW　　apoptosis; HFE7A; autoimmune disease; Hashimoto's disease;
KW　　systemic lupus erythematosus; graft versus host disease;
KW　　Sjogren syndrome; pernicious anaemia; Addison's disease;
KW　　scleroderma; Goodpasture syndrome; Crohn's disease; sterility;
KW　　rheumatoid arthritis; autoimmune haemolytic anaemia;
KW　　myasthenia gravis; multiple sclerosis; Basedow's disease;
KW　　thrombopenia purpura; insulin-dependent diabetes; allergy;
KW　　atopy; arteriosclerosis; myocarditis; cardiomyopathy;
KW　　glomerular nephritis; hypoplastic anaemia; hepatitis; AIDS;
KW　　transplant rejection; therapy; complementarity determing region;
KW　　CDR.
XX
OS　　Mus musculus.
XX
FH　　Key　　　　Location/Qualifiers
FH
FT　　Peptide　　1..19
FT　　　　　　　/label= Sig_peptide
FT　　Protein　　20..464
FT　　　　　　　/label= Mat_protein
FT　　Region　　20..140
FT　　　　　　　/label= Variable
FT　　Region　　141..464
FT　　　　　　　/label= Constant
FT　　Region　　50..54
FT　　　　　　　/label= CDR_H1
FT　　　　　　　/note= "CDR 9"
FT　　Region　　69..84
FT　　　　　　　/label= CDR_H2
FT　　　　　　　/note= "claim 9"
FT　　Region　　118..128
FT　　　　　　　/label= CDR_H3
FT　　　　　　　/note= "claim 9"
XX
PN　　AU9859701-A.
XX
PD　　08-OCT-1998.
XX
PF　　30-MAR-1998;　98AU-0059701.
XX
PR　　08-OCT-1997;　97JP-0276064.
PR　　01-APR-1997;　97JP-0082953.
PR　　25-JUN-1997;　97JP-0169008.

```
RESULT   9

B14747
ID   B14747 standard; Protein; 464 AA.
XX
AC   B14747;
XX
DT   24-NOV-2000  (first entry)
XX
DE   Mouse anti-Fas antibody HFE7A heavy chain.
XX
KW   Anti-Fas antibody; monoclonal antibody HFE7A; FERM-BP-5828;
KW   murine; complementarity determining region; CDR; human Fas;
KW   Fas ligand; apoptosis modulator; programmed cell death;
KW   autoimmune disease; allergy; atopy; arteriosclerosis; myocarditis;
KW   cardiomyopathy; glomerulonephritis; aplastic anaemia; panmyelophthisis;
KW   hepatitis; AIDS; graft rejection; heavy chain.
XX
OS   Mus musculus.
XX
PN   JP2000169393-A.
XX
PD   20-JUN-2000.
XX
PF   30-SEP-1999;  99JP-0278301.
XX
PR   30-SEP-1998;  98JP-0276883.
XX
PA   (SANY ) SANKYO CO LTD.
XX
PT   Preventive or treating agent for the diseases caused by an abnormality
PT   in the Fas/Fas ligand system e.g. autoimmune diseases, contains
PT   anti-Fas antibody. -
XX
PS   Example 4; Page 67-68; 139pp; Japanese.
XX
CC   The invention relates to compositions for the prevention or treatment
CC   of diseases caused by an abnormality in the Fas/Fas ligand system
CC   or an anti-Fas antibody as the active component. The anti-Fas
CC   containing an anti-Fas antibody as the active component. The anti-Fas
CC   antibody is either the murine anti-human Fas monoclonal antibody HFE7A,
CC   or a humanised version of HFE7A containing identical CDRs
CC   (complementarity determining regions) to antibody HFE7A. Vla its
CC   interaction with Fas, the antibody of the invention acts as a modulator
CC   of apoptosis. The compositions of the invention may therefore be used in
CC   the treatment or prevention of conditions such as autoimmune diseases,
CC   allergy, atopy, arteriosclerosis, myocarditis, cardiomyopathy,
CC   glomerulonephritis, aplastic anaemia (panmyelophthisis), hepatitis, AIDS
CC   heavy chain of the murine anti-human Fas monoclonal antibody HFE7A,
CC   and organ graft rejection. The present sequence represents the
CC   which is produced by hybridoma HFE7A (FERM-BP-5828).
XX
DR   WPI; 2000-485645/43.
DR   N-PSDB; A72108.
XX
SQ   Sequence    464 AA;
```

```
Qy      1 EVQLQQSGPELVKPGASVMSCRTSAYTFTENTVHWVKQSHGESLEWIGGINPYYGGSIF  60
          :|||||||||||||| ||:: |||:|| ||:| |||||:|||||||||:|| :  :
Db     20 qvqlqqpgaelvkpgasvklsckasgytfsywmqwvkqrpgglewigeidpsdsytny  79

Qy     61 SPKFKGKATLTVDKSSSSTAYMELRSLTSEDSAVYYCARR---AGAYYFDYWGQGTTLTVS 117
          :||||||||:|||| |||||||||||||||||||||||||   :|||||||||||||||||
Db     80 nqkfkgkatltvdtssstaymqlsslt sedsavyycarnrdysnnwyfdvwgtgttvtvs 139

Qy    118 SAKTTPPSVYPLAPGCGDTTGSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHTFPALLQS 177
          ||||||||||||||||| |   | ||||||||||||||||||:|||||||||:|||||||
Db    140 sakttppsvyplapgsaagtnsmvtlgclvkgyfpepvtvtwnsgslssgvhtfpavlqs 199
```

```
RESULT  10

W90897
ID   W90897 standard; Protein; 464 AA.
XX
AC   W90897;
XX
DT   08-AUG-2000  (first entry)
XX
DE   Murine anti-Fas antibody HFE7A heavy chain protein.
XX
KW   Fas; antibody; murine; anti-inflammatory; anti-anemic; antidiabetic;
KW   anti-allergic; anti-arthritic; antiviral; immunomodulatory; cardiant;
KW   dermatological; immunosuppressive; thyromimetic; antirheumatic; anti-Fas;
KW   multiple sclerosis; Basedow's disease; thrombopenia purpura; allergy;
KW   insulin dependent diabetes mellitus; arteriosclerosis; myocarditis;
KW   nephrotropic; antiinfertility; neuroprotective; antiarteriosclerotic;
KW   hepatotropic; humanized; apoptosis; systemic lupus erythematosus; HFE7A;
KW   cardiomyopathy; glomerulonephritis; hepatitis; transplant rejection.
KW   Hashimoto disease; rheumatoid arthritis; graft versus host disease;
KW   Sjorgen's syndrome; anemia; Addison's disease; scleroderma; sterility;
KW   Goodpasture syndrome; Crohn's disease; sterility; myasthenia gravis;
XX
OS   Mus musculus.
XX
PN   EP990663-A2.
XX
PD   05-APR-2000.
XX
PF   29-SEP-1999;  99EP-0307711.
XX
PR   30-SEP-1998;  98JP-0276881.
PR   30-SEP-1998;  98JP-0276882.
XX
PA   (SANY ) SANKYO CO LTD.
XX
PI   Serizawa N, Haruyama H, Nakahara K, Tamaki I, Takahashi T;
XX
PT   New humanized anti-Fas antibody, useful for treating or preventing e.g.
PT   inflammatory or autoimmune disease, induces apoptosis selectively in
PT   cells with abnormal Fas-Fas ligand systems -
XX
PS   Example reference 4; Page 100-102; 263pp; English.
XX
CC   This invention describes a novel humanized anti-Fas antibody-like
CC   molecule (I) that, induces apoptosis in cells with an abnormal Fas/Fas
CC   ligand system, by binding to Fas on the cell surface, and prevents
CC   apoptosis in cells with a normal system, by inhibiting binding between
CC   Fas and its ligand. The products of the invention have anti-inflammatory,
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Qy    178 GLYTMSSSVTVPSSTWPSQTVTCSVAHPASSTTVDKLEPSGPISINPCPPCEHKCP 237
          :||:|||||||||||||||||||||||||||||||||||||||| | || |
Db    200 dlytlsssvtvpssvtgvtcnvahpasstkvdkkivp------rdc-gckpc-ict 250

Qy    238 APNLEGGPSVFIFPPNIKDVLMISLTPKVTCVVVDVSEDDPDVQISWFVNNVEVHTAQTQ 297
          :    |||||| |  ||||| ||:||||||||||:|||:||||||| :  ||| | || |
Db    251 vpevs---svfifpppkpkdvltltlpkvtcvvvdiskddpevqfswfvddvevhtaqtq 307

Qy    298 THREDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTISKIKGLVRAPQVYI 357
          :|||||||||:|::|||:||:||||||||||||||:|:|:|||| |||||:||| | |
Db    308 preeqfnstfrsvselpimhqdwlngkefkcrvnsaafpaplektiskk tgrpkapgvyt 367

Qy    358 LPPPAEQLSRKDVSLTCLVVGFNPGDISVEWTSNGHTEENYKDTAPVLDSDGSYFIXSKL 417
          :|| ||||||||||||||| || | || |||:| |||||| ||||:||||||| |||||
Db    368 ipppkegmakdkvsltcmitdffpeditvewqwngqpaenykntqpimntngsyfvyskl 427

Qy    418 NMKTSKWEKTDSFSCNVRHEGLKNYLKKTISRSPGK 454
          |::| || ::|:|||| |||| ::|:|| ||| |||
Db    428 nvqksnweagntfcsvlheglhnhhteksshspgk 464
```

CC   anti-anemic, antidiabetic, anti-allergic, anti-arthritic, antiviral,
CC   immunomodulatory, dermatological, immunosupressive, thyromimetic,
CC   antirheumatic, nephrotropic, antiinfertility; neuroprotective,
CC   antiarteriosclerotic, cardiant and hepatropic activity. (I) Induce
CC   apoptosis by binding to cell surface Fas or inhibit it by competitive
CC   inhibition of ligand binding. (I) are used to treat and/or prevent
CC   diseases associated with the Fas/Fas ligand system, especially systemic
CC   lupus erythematosus, Hashimoto disease, rheumatoid arthritis, graft
CC   versus host disease, Sjorgen's syndrome, pernicious or hypoplastic
CC   anemia, Addison's disease, scleroderma, Goodpasture syndrome, Crohn's
CC   disease, autoimmune hemolytic anemia, sterility, myasthenia gravis,
CC   multiple sclerosis, Basedow's disease, thrombopenia purpura, insulin
CC   dependent diabetes mellitus, allergy, arteriosclerosis, myocarditis,
CC   cardiomyopathy, glomerulonephritis, hepatitis (fulminant, chronic, viral
CC   (B, C or D) or alcoholic), and transplant rejection. (I) selectively
CC   inhibit apoptosis in normal cells but selectively induce it in abnormal
CC   cells. They bind to both human and murine Fas, so can be evaluated in
CC   murine disease models. (I) act on the active site of Fas, i.e. they mimic
CC   the native ligand, do not induce liver disease, and have reduced risk of
CC   inducing a human anti-murine antibody response. This sequence represents
CC   a murine anti-Fas monoclonal antibody HFE7A heavy chain described in the
CC   method of the invention.
XX
SQ   Sequence   464 AA;

Query Match   Best Local Similarity   62.9%;   Score 1564.5;   DB 21;   Length 464;
Matches   298; Conservative   58;   Pred. No. 1.7e-93;   Mismatches   86;   Indels   15;   Gaps   5;

```
Qy    1 EVQLQQSGPELVKPGASVMISCRTSAYTFTENTVHWVKQSHGESLEWIGGINPYYGGSIF 60
        | ||||||| |||||||||||| ||| :|| | ||||| |||||||| || || : :|:|
Db   20 qvqlqqpgaelvkpgasvkiscksgsgytftsywmqwvkqrpgglewigeidpsdsytny 79

Qy   61 SPKFKGKATLTVDKSSSTAYMELRSLTSEDSAVYYCARR---AGAYFDYWGQGTTLTVS 117
        : |||||||| :|||||||| |||||||||||||||||||   ::|| |||:||||:|:||
Db   80 nqkfkgkatlvdtsssstaynqlsltsedsavyycarnrdysnnwyfdvwgtgtvtvs 139

Qy  118 SAKTTPPSVYPLAPGCGDTTGSSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHTFPALLQS 177
        |||||||||||||| ||  || ||:|||||||||||||||| |||||||| |||||||::|
Db  140 sakttppsvyplapgsaaqtnsmvtlgclvkgyfpepvtvtvnsgslssgvhtfpavlqs 199

Qy  178 GLYTMSSSVTVPSSTWPSQVTVCSVAHPASSTTVDKKLEPSGPISTINPCPCKECHKCP 237
        |||| |||||||||||||| ||| ||||||||| ||||:|       |:| ||:| |||
Db  200 dlytlssvtvpsstwpsqtvtcnvahpasstkvdkkivp------rdc-gckpc-ict 250

Qy  238 APNLEGGPSVFIFPPNIKDVLMISLTPKVTCVVVDVSEDDPDVQISWFVNNVEVHHTAQTQ 297
        .|: | |||| |||| :|||| : |||||||||||| :::|||:|: ||::||||:|||||
Db  251 vpevs---svfifppkpkdvltitltpkvtcvvvdiskddpevqfswfvddvevhtaqtq 307

Qy  298 THREDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTIISKIKGLVRAPQVYI 357
        :|||:||||| |||:||: | :||:|||||||:|:| | ||||:||:| |||| |||||:
Db  308 preeqfnstfrsvselpimhqnwlngkefkcrvnsaafpapiektiskttkgrpkapqvyt 367

Qy  358 LPPPAEQLSRKDVSLTCLCVVGFNPGDISVEWTSNGHTEENYKDTAPVLDSDGSYFIYSKL 417
        :|||:|: || ||||||| : ||||||||||| ::|: |||||||||| ||:||||:|||
Db  368 ipppkeqmakdkvsltcmitdffpeditvewqwngqpaenyknitqpimntngsyfvyskl 427

Qy  418 NMKTSKWEKTDSFSCNVRHEGLKNYLKKITSRSPGK 454
        |: || ||| |||||:|:|||||:||::| |||||
Db  428 nvqksnweagntftcsvlheglhnhhteksishspgk 464
```

RESULT 11
Y50151

ID   Y50151 standard; Protein; 453 AA.
XX
AC   Y50151;
XX
DT   31-JAN-2000   (first entry)
XX
DE   Antibody F19 chimeric mouse/human heavy chain variable region (chF19HC).

KW   Antibody; monoclonal; F19; fibrinogen activation protein alpha; FAP;
KW   humanisation; complementarity determining region; CDR; CDR grafting;
KW   reactive stroma; fibroblast; epithelial cancer; diagnosis;
KW   immune response; framework sequence; constant region;
KW   variable region; producibility; treatment; cancer; colorectal; lung;
KW   breast; head; neck; ovarian; lung; bladder; pancreatic; metastasis;
KW   detection; wound healing; skin inflammation; tumour; immunogenicity;
KW   chimeric; heavy chain.
XX
OS   Chimeric - Mus sp.
OS   Chimeric - Homo sapiens.
XX
PN   EP953639-A1.
XX
PD   03-NOV-1999.
XX
PF   30-APR-1998;   98EP-0107925.
XX
PR   30-APR-1998;   98EP-0107925.
XX
PA   (BOEH) BOEHRINGER INGELHEIM INT GMBH.
XX
PI   Park JE, Garin-Chesa P, Bamberger U, Leger O, Saldanha J;
PI   Rettig WJ;
XX
DR   WPI; 1999-621833/54.
XX
PT   New antibody protein, useful for treating cancer and for imaging
PT   presence of activated stromal fibroblasts in healing wound or inflamed
PT   skin -
XX
PN   EP953639-A1.

Example 1; Fig 18; 143pp; English.

CC   This sequence represents the heavy chain variable region of a
CC   chimeric mouse/human F19 antibody (chF19HC). F19 (ATCC
CC   Accession number HB 8269) is a murine monoclonal antibody
CC   against fibroblast activation protein alpha (FAP). FAP is a cell
CC   surface molecule of reactive stromal fibroblasts, and its induction
CC   is a highly consistent molecular trait of the reactive stroma of many
CC   types of epithelial cancer. Although F19 may be useful in vitro, e.g.
CC   for diagnosis, its applications for in vivo use in humans are problematic
CC   as it elicits a human anti-mouse response which reduces the efficacy of
CC   the antibody in patients and impairs continued administration. This
CC   chimeric antibody was humanised by joining entire murine variable regions
CC   to human constant regions. However, humanised antibodies produced by this
CC   method can still elicit an anti-human response in humans, whereas
CC   antibodies humanised via CDR (complementarity determining region)
CC   grafting are less immunogenic in humans. Humanised F19 antibodies are
CC   useful for treating cancers e.g., colorectal cancers, non-small cell
CC   lung cancers, breast cancers, head and neck cancers, ovarian cancers,
CC   lung cancers, bladder cancers, pancreatic cancers and metastatic cancers.
CC   They are also useful for the detection of activated stromal fibroblasts
CC   in a healing wound, inflamed skin or a tumour in a human patient.
XX
SQ   Sequence   453 AA;

Query Match   Best Local Similarity   62.7%;   Score 1559;   DB 20;   Length 453;
Matches   297; Conservative   61;   Pred. No. 3.8e-93;   Mismatches   88;   Indels   14;   Gaps   4;

```
Qy    2 VQLQQSGPELVKPGASVMISCRTSAYTFTENTVHWVKQSHGESLEWIGGINPYYGGSIFS 61
        |||||| ||||||||||| |:||:| |||||| ||||:||| |||||||||||  : ::
Db    1 vqlqqspelvkpgasvkmscktsrytfteytlhwvrqshgkslewigginpnngiipyn 60

Qy   62 PKFKGKATLTVDKSSSTAYMELRSLTSEDSAVYYCARRAGAYF-----DYWGQGTTLT 115
        ||||| ||||| :|||||||||||||||||||||| ||  || |     |||||||:|
Db   61 qkfkgratltvgksstaymelrsltsedsavyfcarrlavgydeghamdywgggtsvt 120

Qy  116 VSSAKTPPSVYPLAPGCGDTTGSSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHTFPALL 175
        ||||:| ||||||||| ||  |  ::||||||| ||||||| || ||:||:| |||||||| :|
Db  121 vssastkgpsvfplapssksstsgggtaalgclvkdyfpepvtvswnsgaltsgvhtfpavl 180
```

```
RESULT 12
Y50157

ID   Y50157 standard; Protein; 472 AA.
XX
AC   Y50157;
XX
DT   31-JAN-2000 (first entry)
XX
DE   Chimeric mouse/human F19 antibody heavy chain.
XX
KW   Antibody; monoclonal; F19; fibrinogen activation protein alpha; FAP;
KW   humanisation; complementarity determining region; CDR; CDR grafting;
KW   reactive stroma; fibroblast; epithelial cancer; diagnosis;
KW   immune response; framework sequence; treatment; constant region;
KW   variable region; producibility; cancer; colorectal; lung;
KW   breast; head; neck; ovarian; lung; bladder; pancreatic; metastasis;
KW   detection; wound healing; skin inflammation; tumour; immunogenicity;
KW   chimeric; heavy chain.
XX
OS   Chimeric - Mus sp.
OS   Chimeric - Homo sapiens.
XX
FH   Key             Location/Qualifiers
FH
FT   Peptide         1..19
FT                   /note= "Leader peptide"
FT   Protein         20..472
FT                   /note= "Mature chimeric mouse/human F19 heavy chain"
FT   Region          20..143
FT                   /note= "Mature mouse F19 heavy chain variable region"
FT   Region          50..54
FT                   /note= "Complementarity determining region (CDR) 1"
FT   Region          69..85
FT                   /note= "CDR 2"
FT   Region          118..132
FT                   /note= "CDR 3"
FT   Misc-difference 143..144
FT                   /note= "mRNA splicing causes an Ala to be inserted
FT                   between these residues"
FT   Region          144..472
FT                   /note= "Human gamma-1 heavy chain constant region"
XX
SQ   Sequence   472 AA;
```

```
Qy  176 Q-SGLYTMSSSVTVPSSTWPSQTVTCSVAHPASSTTVDKKLEPSGPISTINPCPCKECH 234
            |||| |:||    |||||||||:  :|| | ||  :|::| ::|||| ::|| ||||
Db  181 qssglyslssvvtvpssslgtqtyicnvnhkpsntkvdkkvepkscdkt-htcpp----- 234

Qy  235 KCPAPNLEGGPSVFIFPPNIKDVLMISLTPKVTCVVVDVSEDDPDVQISWFVNNVEVHTA 294
         |||||||||||||:|||| | |||| ||:|||||||| : |||  |  |:|||  |
Db  235 -cpapellggpsvflfppkpkdtlmisrtpevtcvvvdvshedpevkfnwyvdgvevhna 293

Qy  295 QTQTHREDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTISKIGLVRAPQ 354
         |:|||||||||||||||| ||:|||:||||| :|:||| :||||||:|||||||||
Db  294 ktkpreeqynstyrvvsvltvlhqdwlngkeykckvsnkalpapiektiskakgqprepq 353

Qy  355 VYILPPPAEQLSRKDVSLTCLVVGFNPGDISVEWTSNGHTEENYKDTAPVLDSDGSYFIY 414
         | ||| | :|||| ||||||:|:|||:|| ||| |:|||:|| :||||||||||:|
Db  354 vytlppsreemtknqvsltclvkgfypsdiavewesngqpennykttppvldsdgssffly 413

Qy  415 SKLNMKTSKWEKTDSFSCNVRHEGLKNYLKKTISRSPGK 454
         |  ||| |:| |||| | |  || |||:|  ||||||||
Db  414 skltvdksrwqggnvfscsvmhealhnhytqkslslspgk 453
```

```
DR   WPI; 1999-621833/54.
DR   N-PSDB; Z32482.
XX
PN   New antibody protein, useful for treating cancer and for imaging
PT   presence of activated stromal fibroblasts in healing wound or inflamed
PT   skin -
XX
PT   New antibody protein, useful for treating cancer and for imaging
XX
PI   Rettig WJ;
```

```
CC   This sequence represents the heavy chain of a chimeric mouse/human F19
CC   antibody. F19 (ATCC Accession number HB 8269) is a murine monoclonal
CC   antibody against fibroblast activation protein alpha (FAP). FAP is a cell
CC   surface molecule of reactive stromal fibroblasts, and its induction
CC   is a highly consistent molecular trait of the reactive stroma of many
CC   types of epithelial cancer. Although F19 may be useful in vitro, e.g.,
CC   for diagnosis, its applications for in vivo use in humans are problematic
CC   as it elicits a human anti-mouse response which reduces the efficacy of
CC   the antibody in patients and impairs continued administration. This
CC   chimeric antibody was humanised by joining entire murine variable regions
CC   to human constant regions. However, humanised antibodies produced by this
CC   method can still elicit an anti-mouse response in humans, whereas
CC   antibodies humanised via CDR (complementarity determining region)
CC   grafting are less immunogenic in humans. Humanised F19 antibodies are
CC   useful for treating cancers e.g., colorectal cancers, non-small cell
CC   lung cancers, breast cancers, head and neck cancers, ovarian cancers,
CC   lung cancers, bladder cancers, pancreatic cancers and metastatic cancers.
CC   They are also useful for the detection of activated stromal fibroblasts
CC   in a healing wound, inflamed skin, or a tumour in a human patient.
XX
```

```
RESULT 13
R66758

Example 1; Fig 27; 143pp; English.

Query Match   62.3%;   Score 1550.5;   DB 20;   Length 472;
Best Local Similarity   64.4%;   Pred. No. 1.4e-92;
Matches   297;   Conservative   62;   Mismatches   87;   Indels   15;   Gaps   5;
```

```
Qy    1 EVQLQQSGPELVKPGASVMISCRTSAYTFTENTVHWVKQSHGESLEWIGGIGNPYYGGSIF 60
          |||||||||||||||||||  :||| |:|||  ||||: :|||||||||||||||||||
Db   20 evqlqqsgpelvkpgasvkmscktsrytfteytlhwvrqshgkslewigginpnngipny 79

Qy   61 SPKFKGKATLIVDKSSSTAYMELRSLTISEDSAVYYCARRAGAYF------DYWGQGTTL 114
          : ||||:|||:|||||||:||||||:|||:||||||||||||||      ||||||||
Db   80 nqkfkgratlltvgkssstaymelrslsedsavyfcarrriaygydeghamdywgqgtsv 139

Qy  115 TVSSAKTTPPSVYPLAPGCGDTTGSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHFPAL 174
          |||||:|| |||||| |  ||||||| |:|||||||||||:||||||||||||||||
Db  140 tvsss-tkgpsvfplapskstsggtaalglclvkdyfpepvtvswnsgaltsgvhtfpav 198

Qy  175 LQ-SGLYTMSSSVTVPSSTWPSQTVTCSVAHPASSTTVDKKLEPSGPISTINPCPCKEC 233
          || |||||||||||||||| |||| :|| |||||||||||||||:|||||||||:|| |
Db  199 lqssglyslssvvtvpssslgtqtyicnvnhkpsntkvdkkvepkscdkt-htcpp--- 253

Qy  234 HKCPAPNLEGGPSVFIFPPNIKDVLMISLTPKVTCVVVDVSEDDPDVQISWFVNNVEVHT 293
          | ||||:||||||||:|||||| | |||| ||:|||||||| : |||  |  |:|||  |
Db  254 --cpapellggpsvflfppkpkdtlmisrtpevtcvvvdvshedpevkfnwyvdgvevhn 311

Qy  294 AQTQTHREDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTISKIGLVRAP 353
          ||:||||||||||||||||| ||:|||:||||| :|:||| :|||||||:||||||||
Db  312 aktkpreeqynstyrvvsvltvlhqdwlngkeykckvsnkalpapiektiskakgqprep 371

Qy  354 QVYILPPPAEQLSRKDVSLTCLVVGFNPGDISVEWTSNGHTEENYKDTAPVLDSDGSYFI 413
          | | ||| | :|||| ||||||:|:|||:|| ||| |:|||:|| :||||||||||:|||
Db  372 qvytlppsreemtknqvsltclvkgfypsdiavewesngqpennykttppvldsdgssffl 431

Qy  414 YSKLNMKTSKWEKTDSFSCNVRHEGLKNYLKKTISRSPGK 454
          |  ||| |:| |||| | |  || |||:|  ||||||||
Db  432 yskltvdksrwqggnvfscsvmhealhnhytqkslslspgk 472
```

```
PN   EP953639-A1.
XX
PD   03-NOV-1999.
XX
PF   30-APR-1998;  98EP-0107925.
PR   30-APR-1998;  98EP-0107925.
XX
PA   (BOEH ) BOEHRINGER INGELHEIM INT GMBH.
XX
PI   Park JE, Garin-Chesa P, Bamberger U, Leger O, Saldanha J;
```

```
ID   R66758 standard; Protein; 465 AA.
XX
AC   R66758;
XX
DT   01-SEP-1995 (first entry)
XX
DE   Anti-tobacco mosaic virus monoclonal Ab heavy chain.
XX
KW   Tobacco mosaic virus; TMV; monoclonal antibody;
KW   heavy chain; virus-resistant plants; biofarming.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FH
FT   Peptide         1..19
FT                   /label= leader
FT   Peptide         20..465
FT                   /label= mat_peptide
FT   Domain          20..128
FT                   /note= "variable heavy domain"
FT   Domain          129..141
FT                   /note= "J heavy 4 domain"
FT   Domain          142..465
FT                   /note= "constant heavy domain"
XX
PN   JP06319396-A.
XX
PD   22-NOV-1994.
XX
PF   07-MAY-1993; 93JP-0131208.
XX
PR   07-MAY-1993; 93JP-0131208.
XX
PA   (NISB ) JAPAN TOBACCO INC.
PA   (KURS ) KURARAY CO LTD.
XX
WPI; 1995-040220/06.
N-PSDB; Q79930.
XX
Example 2: Pages 14-15; 26pp; Japanese.
XX
Transformed plant producing animal-derived anti-virus antibody -
esp. tobacco plants producing anti-tobacco mosaic virus
monoclonal antibody
XX
Q79929 and Q79930 encode R66757 and R66758, the light and heavy
chains of an animal derived anti-tobacco mosaic virus (TMV)
monoclonal antibody. The cDNAs were incorporated into a Ti
plasmid vector, which was incorporated into A. tumefaciens.
The resultant plant expression vector was used to transform
tobacco plants, making them TMV resistant, the plants could
also be biofarmed for the prodn. of anti-virus antibodies.
XX
SQ   Sequence    465 AA;

Query Match            62.38%;   Score 1550;   DB 16;   Length 465;
Best Local Similarity  64.4%;   Pred. No. 1.5e-92;
Matches  295;   Conservative  58;   Mismatches  89;   Indels  16;   Gaps  5;

Qy     1 EVQLQQSGPELVKPGASVMISCRTSAYTFTENTVHWVKQSHGESLEWIGGINPYYGGSIF 60
          ||||||| ||  ||  |: :||||| : |  ||  ||||| | |  : |:|||| | |: :
Db     1 qvqlqqsgaelarpgasvklsckasgytftsywmqwvkqrpgqglewigaiypngdtry 79

Qy    61 SPKFKGKATLTVDKSSSTAYMELRSLTSEDSAVYYCARRAG----AYYFDYWGQGTTLTV 116
          :|||||||||  ||||||||:  |:| |||||:|||||| |       |||||||||:||:
Db    80 tqkfkgkatlladkssstaymglsalasedsavyycareggyswsdyamdywgggtsvtv 139

Qy   117 SSAKTPPSVYPLAPGCGDTTGSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHTFPALLQ 176
          |||||||||||| ||||||||||||||||||||||||||||||||||||:|||||:||
Db   140 ssaktppsvyplapgsaaqtnsmvtlgclvkgyfpepvtvtwnsgslssgvhtfpavlq 199

Qy   177 SGLYTMSSSVTVPSSTWPSQVTVCSVAHPASSTTVDKLEPSGPISTINPCPPCKECHKC 236
```

```
Db   200 sdlytlsssvtvpssprpsetvtcnvahpasstkvdkilvp------rdc-gckpc-lc 250
          | |:||||||||||| |  |:||||| | ||||||||||||:            |: |  |:
Qy   237 PAPNLEGGPSVFIFPPNIKDVLMISLTPKVTCVVVDVSEDDPDVQISWFVNNVEVHTAQT 296

Db   251 tvpevs--svfifppkpkdvltltpkvtcvvvdiskddpevqfswfvddvevhtaqt 307
          ||| ::   :||:||| |  ||| |||||||||| |  ||:|| |||| ||||||||
Qy   297 QTHREDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTISKIKGLVRAPQVY 356

Db   308 qpreeqfnstfrsvselpimhqdwlngkefkcrvnsaafpaplektisktgrpkapqvy 367
          || ||:||||  |  | |:|||| ||||||||| | :   |:|||||| | ||||||||
Qy   357 ILPPPAEQLSRKDVSLTCLVVGFNPGDISVEWTISNGHEENYKDTAPVLDSDGSYFIYSK 416

Db   368 tipppkeqmakdkvsltcmitdffpeditvewqwngqpaenykntqplmntngsyfvysk 427
          | ||| || | |||||||:|   ||  |||| | | |  |||| |   |  |||||:|||
Qy   417 LNMKTSKWEKTDSFSCNVRHEGLKNYYLKKTISRSPGK 454
          | |:|| |:|||| |||||| || |||| ||||:| ||
Db   428 lnvqksnweagntfcsvlheglhnhhteksishspgk 465
```

```
RESULT 14
R30774
ID   R30774 standard; protein; 454 AA.
XX
AC   R30774;
XX
DT   12-MAY-1993 (first entry)
XX
DE   H52H4-160 murine anti-CD18 antibody heavy chain.
XX
KW   Humanisation; rapid; monoclonal antibody.
XX
OS   Mus musculus.
XX
OC   Mus musculus.
XX
DR   WO9222653-A.
XX
PN   WO9222653-A.
XX
PD   23-DEC-1992.
XX
PF   15-JUN-1992;   92WO-US05126.
XX
PR   14-JUN-1991;   91US-0715272.
XX
PA   (GETH ) GENENTECH INC.
XX
PI   Carter PJ, Presta LG;
XX
DR   WPI; 1993-018139/02.
XX
PT   Humanisation of antibodies - by molecular modelling of the variable
PT   domains and alteration by gene conversion mutagenesis
XX
PS   Disclosure; Fig 6A; 126pp; English.
XX
CC   The sequence is that of the heavy chain of murine anti-CD18
CC   antibody H52H4-160.
XX
SQ   Sequence    454 AA;

Query Match            62.2%;   Score 1548;   DB 14;   Length 454;
Best Local Similarity  63.8%;   Pred. No. 2e-92;
Matches  294;   Conservative  59;   Mismatches  94;   Indels  14;   Gaps  4;

Qy     1 EVQLQQSGPELVKPGASVMISCRTSAYTFTENTVHWVKQSHGESLEWIGGINPYYGGSIF 60
          ||||||| ||||||| || |||||  : ||||||||||||||||||||||||||| | :
Db     1 qvqlqqsgpelvkpgasvkisckasgytfteytmnwvkqshgkslewiggfnpkngssh 60

Qy    61 SPKFKGKATLTVDKSSSTAYMELRSLTSEDSAVYYCARRAG------AYYFDYWGQGTTL 114
          ||||||||||||||||| ||||||||||||||||||||||         |||||||||||
Db    61 nqrfmdkatlavdkststaymelrslsedsgiyycarwrglnygfdvrifdvwgagttv 120

Qy   115 TVSSAKTPPSVYPLAPGCGDTTGSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHTFPAL 174
          ||||||||||||| | |||||||||||||||||||||||||||||||||||||:||||:
Db   115 ...
```

```
RESULT 15

ID   B08026 standard; Protein; 470 AA.
XX
AC   B08026;
XX
DT   14-NOV-2000  (first entry)
XX
DE   A dimeric anti-CD20 heavy chain polypeptide.
XX
KW   Anti-CD20 antibody; dimeric immunoglobulin; immunoglobulin; IgG;
KW   complement system; Fcgamma receptor; cytotoxic effector cell;
KW   host immune cell; programmed cell death; allergic disorder; cancer;
KW   autoimmune disease; allergic asthma; atopic dermatitis; Crohn's disease;
KW   allergic bronchopulmonary aspergillosis; allergic rhinitis;
KW   Graves's disease; food allergy; allergic contact dermatitis; cancer;
KW   B-cell lymphoma; rheumatoid arthritis; ulcerative colitis; psoriasis;
KW   pigeon breeder's disease; hepatitis; leprosy; Lyme disease;
KW   diabetes mellitus; candidiasis; aplastic anaemia.
XX
OS   Chimeric - Mus sp.
OS   Chimeric - Homo sapiens.
XX
FH   Key              Location/Qualifiers
FH
FT   Peptide          1..19
FT                    /note= "signal peptide"
FT   Protein          20..140
FT                    /note= "murine anti-human CD20 heavy chain variable
FT                    region"
FT   Protein          141..470
FT                    /note= "human gamma 1 heavy chain constant region"
XX
PN   WO20004788-A1.
XX
PD   03-AUG-2000.
XX
PF   28-JAN-2000; 2000WO-US01893.
XX
PR   28-JAN-1999;  99US-0238741.
XX
PA   (IDEC-) IDEC PHARM CORP.
XX
PI   Braslawsky GR, Hanna N, Hariharan K, Labarre MJ, Huynh TB;
XX
DR   WPI; 2000-514811/46.
DR   N-PSDB; A63531.
XX
PT   Genetically engineering immunoglobulin (Ig) G/IgG dimers for the
PT   treatment of cancers, allergic disorders and autoimmune conditions -
```

```
PS   Example 1; Fig 2A-C; 65pp; English.
XX
CC   The present sequence represents a dimeric anti-CD20 light chain
CC   polypeptide. The dimeric immunoglobulin is used in the method of the
CC   invention. The specification describes a method for producing an
CC   immunoglobulin (Ig) G/IgG dimer. The method comprises genetically
CC   engineering a monoclonal antibody to introduce a cysteine molecule
CC   which inhibits formation of intramolecular disulphide bridges between
CC   sister heavy chains on the same antibody molecule. The dimer is a
CC   homodimer or heterodimer that is capable of activating components of the
CC   complement system, and has the ability to activate and kill cells via the
CC   complement cascade. The dimer is also capable of binding to Fcgamma
CC   receptors on cytotoxic effector cells and on host immune cells, and is
CC   capable of initiating programmed cell death. The IgG/IgG dimers may be
CC   used to treat allergic disorders, cancers and autoimmune diseases such
CC   as allergic asthma, allergic bronchopulmonary aspergillosis, allergic
CC   rhinitis, atopic dermatitis, Crohn's disease, Graves's disease, food
CC   allergies, allergic contact dermatitis, cancer, CLL cancers and/or B-cell
CC   lymphomas. They may also be used to treat a range of other diseases and
CC   disorders such as rheumatoid arthritis, ulcerative colitis, psoriasis,
CC   pigeon breeder's disease, hepatitis, leprosy, Lyme disease, diabetes
CC   mellitus, candidiasis and aplastic anaemia. They are also useful for
CC   inducing hyper-cross-linking of membrane antigens and for the
CC   preferential killing of selected cell populations.
XX
SQ   Sequence   470 AA;

Query Match             60.1%;  Score 1493.5;  DB 21;  Length 470;
Best Local Similarity   62.0%;  Pred. No. 6.7e-89;
Matches   284;  Conservative   62;  Mismatches 101;  Indels   11;  Gaps   4;

Qy      1 EVQLQQSGPELVKPGASVMISCRTSAVTFTENTVHWVKQSHGESLEWIGGINPYYGGSIF 60
            :|||| ||| |||||||||| :|:|: |||| | |||||:|| ||| ||||| | |||
Db     20 qvqlqpgaelvkpgasvkmsckasgytftsynmhwvkqtprglewigaiypngdtsy 79

Qy     61 SPKFKGKATLTVDKSSSTAYMELRSLTSEDSAVYYCARR---AGAYFDYWGQGTTLTVS 117
            | ||||| |||||||||||||| |||| |||||||||    ||||||||||||||||
Db     80 nqkfkgkatladksssstaymqlsslsedsavyycarstyygdwyfnvwgagttvts 139

Qy    118 SAKTTPPSVYPLAPGCGDTTGSSVTLGCLVKGYFPESVTVTWNSGSLSSSVHTFPALLQ- 176
            :| |||||||:||| |: |:|||| ||||||||| ||||||||||||||||||:| ||
Db    140 aastkgpsvfplapsskstsggtaalgclvkdyfpepvtvswnsgaltsgvhtfpavlqs 199

Qy    177 SGLYTMSSSVTVPSSTWPSQYVTCSVAHPASSTTVDKKLEPSGPISTNPCPPCKECHKC 236
            ||||||||||||||| |:|  |:| |:||| |||||||||||||:|| ::| |:| ::|
Db    200 sglyslssvvtvpsss1gtqtyicnvnhkpsntkvdkkvepkscdkt--htcpp-----c 252

Qy    237 PAPNLEGGPSVFIFPPNIKDVLMISLTPKVTCVVVDVSEDDPDVQISWFVNNVEVHTAQT 296
            |||||| ||||||||||||||||||||:||||| |||||||||| || :|:|||:||| |
Db    253 papellggpsvflfppkpkdtlmisrtpevtcvvvdvshedpevkfnwyvdgvevhnakt 312

Qy    297 QTHREDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTISKIKGLVRAPQVY 356
            | ||||||||||||||||||||:| |:|||||||||||:| || | :|:|:||||||| |
Db    313 kpreeqynstyrvvsvltvlhqdwlngkeykckvsnkalpapiektiskakgqprepqvy 372

Qy    357 ILPPPAEQLSRKDVSLTCLVVGFNPGDISVEWTSNGHTEENNKDTAPVLDSDGSYFIYSK 416
            |||| |||||||||| || |||||||||||||| |:||  :||| ||||||| |||| ||
Db    373 tlppsrdeltknqvsltclvkgfypsdiavewesngqpennykttppvldsdgsfflysk 432

Qy    417 LNMKTSKWEKTDSFSCNVRHEGLKNYLKKTISRSPGK 454
            | |||||| || |||||||||||||||||| || ||
Db    433 ltvdksrwqqgnvfscsvmhealhnhytqkslslcpgk 470
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```
Db  121 tvssastkgpsvfplapsskstsggtaalgclvkdyfpepvtvswnsgaltsgvhtfpav 180
        || ||||||||||||:| |:||| ||||||||||||||||||||||||||||||||||
Qy  175 LQ-SGLYTMSSSVTVPSSTWPSQYVTCSVAHPASSTTVDKKLEPSGPISTNPCPPCKEC 233

Db  181 lqssglyslssvvtvpsss1gtqtyicnvnhkpsntkvdkkvepkscdkt--htcpp--- 235
        | ||||||||||||||||| :|  |:| |:|||| || |||:|:|  | :| |||
Qy  234 HKCPAPNLEGGPSVFIFPPNIKDVLMISLTPKVTCVVVDVSEDDPDVQISWFVNNVEVHT 293

Db  236 --cpapellggpsvflfppkpkdtlmisrtpevtcvvvdvshedpevkfnwyvdgvevhn 293
          ||||:|||||||||||| | ||||||||:||:||||||||| |||| ||| |||||
Qy  294 AQTQTHREDYNSTIRVVSTLPIQHQDWMSGKEFKCKVNNKDLPSPIERTISKIKGLVRAP 353

Db  294 aktkpreeqynstyrvvsvltvlhqdwlngkeykckvsnkalpapiektiskakgqprep 353
        | | ||||||||||||| : |:| |:|||| |:||| |||||:| || | |:|:||||
Qy  354 QVYILPPPAEQLSRKDVSLTCLVVGFNPGDISVEWTSNGHTEENNKDTAPVLDSDGSYFI 413

Db  354 qvytlppsreemtknqvsltclvkgfypsdiavewesngqpennykttppvldsdgsffl 413
        || |||| ||:|||| |||||| |||||||||||| |:||  :||| |||||||| ||
Qy  414 YSKLNMKTSKWEKTDSFSCNVRHEGLKNYLKKTISRSPGK 454

Db  414 yskltvdksrwqqgnvfscsvmhealhnhytqkslslcpgk 454
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